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THE

ONTARIO WATER RESOURCES

COMMISSION

WATER POLLUTION SURVEY

of the

VILLAGE OF DUTTON

COUNTY OF ELGIN

September, 1965

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VILLAGE OF DUTTON - 1965
COUNTY OF ELGIN

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Report on a water pollution
survey of the village of Dutton,
county of Elgin.
80746

R E P O R T

on a

WATER POLLUTION SURVEY

of the

VILLAGE OF DUTTON

County of Elgin

September 8 and 9, 1965.

Division of Sanitary Engineering

REPORT

ONTARIO WATER RESOURCES COMMISSION

A water pollution survey was conducted in the Village of Dutton on September 8 and 9, 1965.

Information pertinent to the survey was provided by Mr.B.E.Downey, Reeve, and Mr.Z.E.MacCallum, Clerk.

GENERAL

The Village of Dutton, with a 1964 assessed population of 814 (1965 Municipal Directory) is located in the southwestern section of the County of Elgin, south of the Macdonald-Cartier Freeway, north of Highway No. 3, and approximately 6 miles north of Lake Erie.

General drainage for the Village of Dutton and the surrounding area is provided by the upper reaches of the Mennie Drain which flows in a southerly direction to discharge into Lake Erie. Local drainage is provided by a system of storm sewers or surface-water drains.

(1) Brown Drain - This municipal drain starts in the Township of Dunwich, enters the Village of Dutton at the north end, passes along Margaret Street, across Mary Street, under the Michigan Central Railway tracks, along Wesley Street, south on Luton Street and south into the Township of Dunwich. This drain provides drainage for the northeast and east sections of the village.

(2) Tile Drain - This drain passes along Currie Street, southwest on Shakleton Street and joins into the Queen Street drain.

(3) Tile Drain - This drain passes along Queen Street, under the Michigan Central Railway, along Salina Street and joins into the Brown Drain.

(4) Tile Drain - This drain flows in a northwesterly direction, circles to the west around the western side of the village and continues into the Mennie Drain. Drainage for the northwest and west sections of the village is provided by this surface-water drain.

Lateral surface-water drains from adjoining streets and areas are connected into these four main surface drains.

Septic tank systems are used in general for the treatment of sanitary sewage. It was learned, however, that many septic tank systems are incomplete, and that overflow waste from many septic tanks is discharged directly, without adequate treatment, into the various municipal surface-water drains. This condition is known to be prevalent in the business areas, and on other properties, where space is not available for the installation of adequate field-tile disposal beds. It was also reported that many private septic tank installations, even where land for field-tile disposal beds was available, were not operating satisfactorily, either because of faulty installations, or due to adverse absorption qualities of the soil. These conditions also result in inadequately treated sanitary sewage and domestic wastes being discharged to the surface-water drainage system.

Two industries within the municipality, a creamery and a laundromat, are identified as potential sources of industrial waste.

Garbage and refuse from the municipality is disposed of in a refuse disposal site located in the Township of Dunwich, approximately 3 miles northwest of the village, west of the Old Currie Road and north of the Macdonald-Cartier Freeway. At the time of the inspection this operation was not considered to be a source of pollution to any surface-water drain or watercourse.

WATER POLLUTION

As a measure in assessing the degree of pollution being discharged from the municipality into the various local drains and into the upper reaches of the Mennie Drain, water samples were collected, where possible, from the flows in street sewers, and from the local surface-water drains.

The sanitary chemical analyses and the bacteriological examination results of samples collected are listed in Table I.

The location of sampling points with identifying numbers are designated on the accompanying map of the Village of Dutton.

INTERPRETATION OF LABORATORY ANALYSES

For convenience in the interpretation of laboratory analyses, the Ontario Water Resources Commission water quality objectives, for waters in storm sewer systems and other surface-water drains are listed.

5-Day BOD (Biochemical Oxygen Demand)

- not greater than 15 parts per million (ppm)

Suspended Solids Content

- not greater than 15 parts per million (ppm)

Coliform Count (Membrane Filter)

- not greater than 2400 per 100 millilitres (ml)

Anionic Detergent (as ABS)

The presence of any level of anionic detergent indicates pollution from domestic sources.

SIGNIFICANCE OF LABORATORY ANALYSES

(1) Brown Drain

The analyses of all samples collected from the Brown Drain indicated the presence of pollution (Samples No. 1, 2, 3 and 4). A marked increase in the level of pollution was indicated at a point near Main Street. The increase in the coliform count and the anionic detergent content indicated that sanitary sewage and other domestic wastes were the probable sources of pollution.

(2) Tile Drain (Currie Street South)

The analyses of samples from this drain (Sample No. 5) indicated a condition of gross pollution. This drain passes along Currie Street (South) and services areas northeast of Main Street and business properties along Main Street. Waste from a laundromat

is discharged into this drain. The excessively high anionic detergent content and coliform counts indicate that domestic wastes are the sources of pollution.

(3) Tile Drain (Queen and Salina streets)

This drain also contained evidence of a condition of gross pollution. The drain services areas along and adjacent to Queen Street, also the southwest portion of the business section. The abnormally high BOD (Biochemical Oxygen Demand) in conjunction with the high coliform count and the high anionic detergent content (Samples No.6 and 7) indicate that large volumes of inadequately treated sanitary sewage, and other domestic wastes, are being discharged into this surface-water drainage system.

(4) Open Drain (Currie Street North)

There was no flow in this drain, within the village limits at the time of the survey.

The waste from a creamery operation is discharged into an open ditch at the rear of the property. It was reported that this ditch discharges into a continuation of the North Currie Street drain at a point west of the village in the Township of Dunwich. This discharge point could not be located. A sample of waste as discharged from the creamery (Sample No. 7) indicated that this waste is not being adequately treated and does constitute a source of pollution.

SUMMARY AND CONCLUSIONS

A water pollution survey was conducted in the Village of Dutton on September 8 and 9, 1965.

The visual observations and findings of the survey confirm that polluting materials are being discharged into the storm water and surface-water drainage system. The extremely high BOD, suspended solids content and coliform counts in conjunction with the high anionic detergent content indicate that sanitary sewage and other domestic wastes are major sources of pollution.

These wastes are being discharged into the surface-water drains from domestic and commercial properties within which adequate means for waste treatment is not provided. The practice of discharging inadequately treated effluents from septic tanks, or polluting materials from any source into a surface-water drain or watercourse constitutes a violation of Section 27, Subsection (1), of the Ontario Water Resources Commission Act which states:

"Every municipality or person that discharges or deposits or causes or permits the discharge or deposit of any material of any kind into or in any well, lake, river, pond, spring, stream, reservoir or other water or watercourse or on any shore or bank thereof or into or in any place that may impair the quality of the water of any well, lake, river, pond, spring, stream, reservoir or other water or watercourse is guilty of an offence and on summary conviction is liable to a fine of not more than \$1,000 or to imprisonment for a term of not more than one year, or to both."

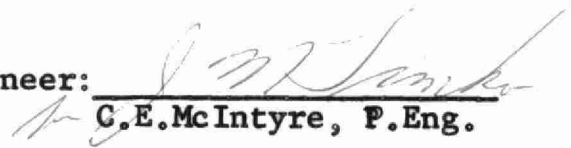
RECOMMENDATIONS

1. As a measure in the control of pollution, and as an aid in improving the sanitary and public health conditions of the municipality, the Village of Dutton should institute a sewerage works programme which would entail the installation of sanitary sewers and the provision of an adequate means of sewage treatment.

2. In the event that the institution of such a programme is not feasible, it will then be necessary for the municipality to take measures to ensure that all private drains, which discharge inadequately treated wastes into any surface-water drain or ditch, storm sewer system, or watercourse, are immediately located and severed.

This action will necessitate that each property owner will then provide a satisfactory and adequate system for the treatment of his own wastes.

All of which is respectfully submitted,

District Engineer: 
C.E. McIntyre, P.Eng.

Approved by: _____
J. R. Barr, Director.

ec

Prepared by:

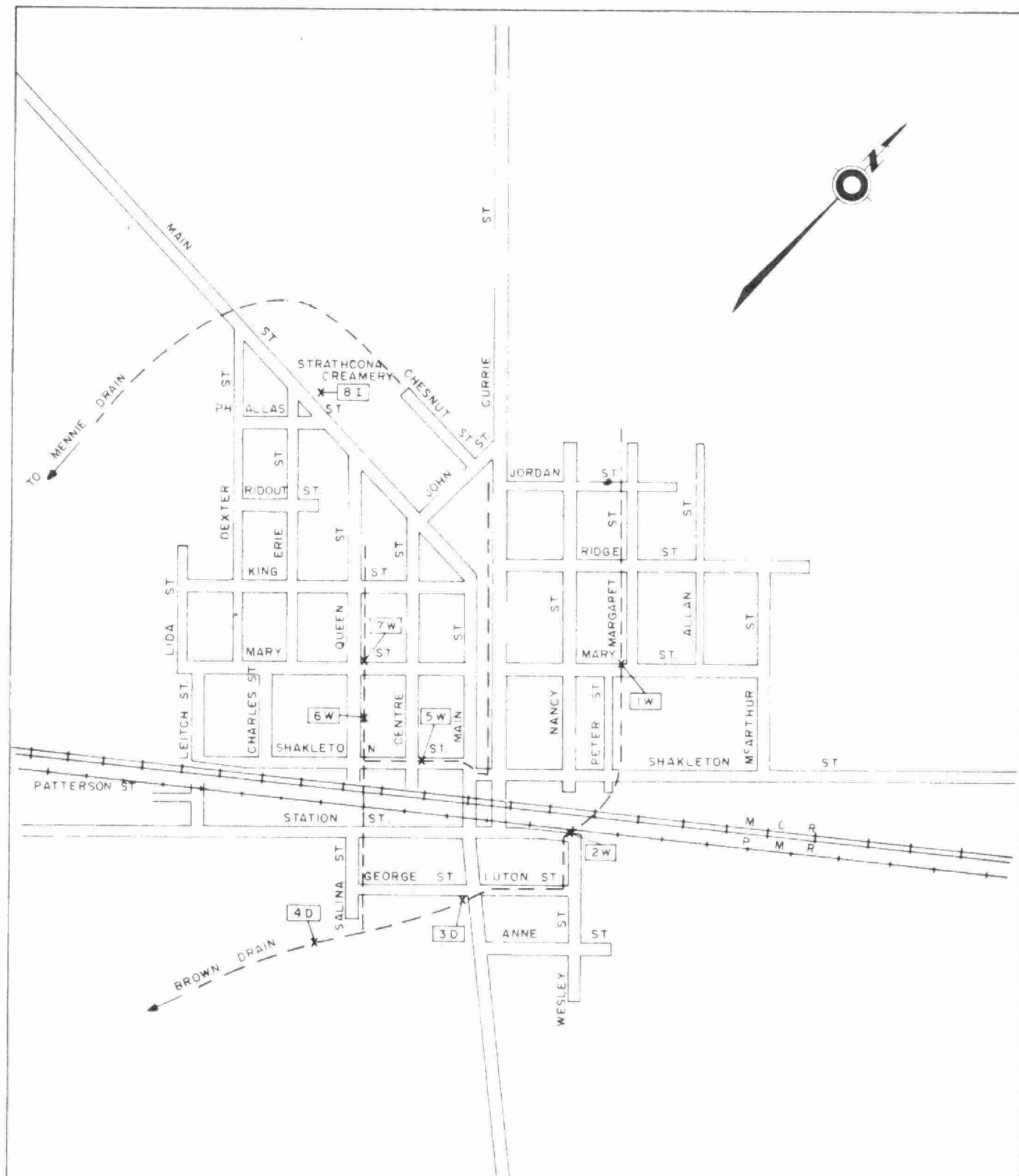
J.K. Ferris,
Engineer's Assistant.

T A B L E I

VILLAGE OF DUTTON - WATER POLLUTION SURVEY

Surface-Water Drains

<u>Sample Number</u>	<u>Location of Sampling Point</u>	<u>5-Day BOD (ppm)</u>	<u>Total (ppm)</u>	<u>SOLIDS Susp. (ppm)</u>	<u>Diss. (ppm)</u>	<u>Anionic Detergents as ABS (ppm)</u>	<u>Coliforms per 100 ml Membrane Filter</u>
1W	Brown Drain at Mary Street	4.6	798	102	696	0.25	1,700
2W	Brown Drain at Station Street	3.0	590	32	558	1.1	1,400
3D	Brown Drain at Main Street	5.6	424	16	408	0.3	23,000
4D	Brown Drain after junction with Salina Street drain	24.0	680	106	574	10.0	69,000,000
5W	Currie Street South Drain Shakleton Street at Centre Street	45.0	2760	296	2464	11.4	12,000,000
6W	Queen Street Drain between Shakleton and Mary streets	56.0	720	170	550	7.4	13,800,000
7W	Queen Street Drain at Mary Street	580.0	5772	5258	514	13.4	18,700,000
8I	Waste from Strathcona Creamery	124.0	452	108	344	0.8	9,000,000



LEGEND

- 4D - SAMPLING POINTS
- DITCH OR DRAIN

ONTARIO WATER RESOURCES COMMISSION

VILLAGE OF DUTTON WATER POLLUTION SURVEY 1965

SCALE: 400 0 400 800 1200

DRAWN BY: W.R.E.

DATE: NOVEMBER 1965

CHECKED BY:

DRAWING NO: 65-149